Docket No. 250980US8DIV

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Youichi AKASAKA, et al.

SERIAL NO: New Application GAU: Unassigned

FILED: Herewith EXAMINER: Unassigned

FOR: RAMAN AMPLIFIER, OPTICAL REPEATER, AND RAMAN AMPLIFICATION METHOD

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:
Applicant(s) wish to disclose the following information.

REFERENCES

■ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references were filed in the Prior Applications, Serial Nos. 10/120,173, filed on April 11, 2002, 09/886,212, filed on June 22, 2001, 09/527,748, filed on March 17, 2000, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.

☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

RELATED CASES

☐ Attached is a list of applicant's pending application(s) or issued patent(s) which may be related to the present application. A copy of the patent(s), together with a copy of the claims and drawings of the pending application(s) is attached along with PTO 1449.

☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

CERTIFICATION

☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

DEPOSIT ACCOUNT

■ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

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Form PTO 1449 (Modified)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO.	SERIAL NO.
		250980US8DIV	New Application
LIST OF REFERENCES CITED BY APPLICANT		APPLICANT	
		Youichi AKASAKA, et al.	
		FILING DATE	GROUP
		Herewith	Unassigned

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	6,178,038	01-01	Taylor, et al.			
	AB	6,282,002	08-01	Grubb, et al.			
	AC	6,320,884	11-01	Kerfoot, III, et al.			
	AD	4,401,364	08-83	Mochizaki			
	AE	5,715,263	02-98	Ventrudo, et al.			
	AF	5,946,428	08-99	Aleksandrov, et al.			
	AG	5,959,750	09-99	Eskildsen, et al.			
	AH	5,966,206	10-99	Jander			
	AI	6,038,356	03-00	Kerfoot, III, et al.			
	AJ	6,081,323	06-00	Mahgerefteh, et al.			
	AK	6,081,366	06-00	Kidorf, et al.			
	AL	6,147,794	11-00	Stentz			
	AM	6,163,636	12-00	Stentz, et al.			
	AN	6,181,464	01-01	Kidorf, et al.			
	AO	6,191,877	02-01	Chraplyvy, et al.			
	AP	6,212,310	04-01	Warts, et al.			
	AQ	6,263,139	07-01	Kawakami, et al.			
	AR	6,266,180	07-01	Inagaki, et al.			
	AS	6,320,695	11-01	Tanaka, et al.			
	AT	6,356,383	03-02	Cornwell, Jr., et al.			
	AU	6,151,160	11-00	Ma, et al.			
	AV	6,344,922	02-02	Grubb, et al.			
	AW	6,417,959	07-02	Bolshtyansky, et al.			
	AX	4,616,898	10-86	Hicks, Jr.			
	AY	4,699,452	10-87	Mollenauer, et al.			
	AZ	4,805,977	02-89	Tamura, et al.			
	AAA	4,881,790	11-89	Mollenauer			
	AAB	5,883,736	03-99	Oshima, et al.			
	AAC	5,887,093	03-99	Hansen, et al.			
	AAD	4,900,917	02-90	Dixon			
	AAE	4,941,738	07-90	Olsson			
	AAF	5,111,322	05-92	Bergano			
	AAG	5,309,535	05-94	Bergano			
	AAH	5,345,331	09-94	Bergano			
	AAI	5,481,391	01-96	Giles			
	AAJ	5,491,576	02-96	Bergano			
					■ Additional References sheet(s) attached		

Examiner	Date Considered

*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AAK	5,539,566	07-96	Terahara			
	AAL	5,600,482	02-97	Watanabe			
	AAM	5,729,372	03-98	Terahara			
	AAN	5,841,797	11-98	Ventrudo, et al.			
	AAO	5,920,423	07-99	Grubb, et al.			
	AAP	6,052,219	04-00	Kidorf, et al.			
	AAQ	6,115,174	09-00	Grubb, et al.			
	AAR	6,122,298	09-00	Kerfoot, et al.			
	AAS	6,292,288	09-01	Akasaka, et al.			
	AAT	6,344,923	02-02	Blondel, et al.			
	AAU	2001-0036004	11-01	Ackerman, et al.			
	AAV	5,673,280	9-97	Grubb et al			

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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
	BA	2-12968	01-90	JAPAN		
	BB	7-99787	04-95	JAPAN		
	BC	10-73852	03-98	JAPAN		
	BD	98/42088	09-98	WIPO		
	BE	0 615 356	09-94	EUROPEAN		
	BF	1 018 666	07-00	EUROPEAN		

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OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	CAA	Angrawal, G.P., *Nonlinear Fiber Optics*, 2nd Edition, Academic Press, pp. 329-334, 1995.
	CAB	K.I. Suzuki, et al., "Bidirectional 10-channel 2.5 Gbits/s WDM transmission over 250 km using (1531-1607nm) gain-band bidirectional erbium-doped fibre amplifiers", Electronic Letters, Aug. 1997.
	CAC	N. Edagawa, et al. "Simultaneous Amplification of Wavelength-Division-Mulitiplexed Signals by a Highly Efficient Fibre Raman Amplifier Pumped by High-Power Semiconductor Lasers", Electronics Letters, Feb. 26, 1987, vol. 23, No. 5, pp. 196-197.
	CAD	*A 92nm Bandwidth Raman, Amplifier*, by Karsten Rottwitt and Howard D. Kidorf, Tyco Submarine Systems, Ltd., PD6—1 – PD—4.
	CAE	*Ultra-wideband hybrid amplifier comprising distributed Raman amplifier and erbium-doped fibre amplifier*, Electronics Letters, June 25, 1998, vol.34, No. 13, pp.1342-1345.
	CAF	Masuda, et al. ECOC '97, Sept. 25, 1997, Conf. Pub. No. 448, pp. 73-76.
	CAG	Aida, et al. IEEE Proceedings, vol. 137, pt. J, No. 4, pp.225-229, Aug. 1990.
	CAH	Lewis, et al. Electronics Letters, vol. 35, #20, pp. 1761-1762. (Abstract only) Sept. 30, 1999.
	CAI	Nimicki et al, I.E.E.E. Journ. of Selected Topics In Quantum Electronics, vol. 7, #1, pp. 3-16, 1/01.
	CAJ	RMori et al. 5th Optoelectronics & Communication Conference, Jul. 2000, pp. 26-27.
	CAK	Namicki et al, Optical Amplifier's and Their Applications, OSA, pp. 7-9, Jul. 12, 2000
	CAL	Wang, L.J. et al. "Analysis of Polarization-Dependent Gain in Fiber Amplifiers." IEEE J. of Quantum Elect., vol. 34, No. 3, Mar. 1998. pp. 413-418
	CAM	Takesue, H. et al. "Stabilization of Pulsed Ligthwave Circulating Around an Amplified Fiber-Optic Ring Incorporating a LOYT Depolarizer." IEEE Photonic Tech. Lett. Dec., 1998. pp. 1748-1750.*
	CAN	Bruyere, F. et al. "Demonstration of an Optimal Polarization Scrambler for Long-Haul Optical Amplifier Systems." IEEE Photonics Tech. Lett.
	CAO	Magruder et al, ECOC, '97, Sep. 25, 1997, Conerence Publication No. 448, pp. 73-76
	CAP	*Fibre Raman amplifier for 1520 nm band WDM transmission*, J. Kani et al., Electronics Letters, Sep. 3.sup.rd 1998, vol. 34, No. 18, pp. 1745-1747.
	CAQ	*Broadband Silica Fibre Raman Amplifiers at 1.3 .mu.m and 1.5 .mu.m*, S.V. Chernikov et al., ECOC'98, Sep. 20-24, 1998, Madrid, Spain, pp. 49-50.

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	CAP	*Fibre Raman amplifiers for broadband operation at 1.3 .mu.m*, D.V. Gapontsev et al. ,Optics Communications, Aug. 1, 1999, 166 (1999) pp. 85-88.
	CAR	*Single-Channel to Multi-Channel Upgrade of 10-Gb/s Transmission Systems by Raman Amplification*, P.B. Hansen et al., 22.sup.nd European Conference on Optical Communication--ECOC'96, Oslo, pp. 2.147-2.150.
	CAS	Yoshihiro Emori et al., *State of the art in diode pumped Raman amplifiers*, OAA 2001, 3 pages.
	CAT	Anders Berntson et al., *Polarization dependence and gain tilt of Raman amplifiers for WDM systems*, Optical Society of America, 2000, 3 pages.
	CAU	Jianping Zhang et al., *Dependence of Raman Polarization Dependent Gain on Pump Degree of Polarization at High Gain Levels*, Optical Society of America, OCC'2000, 3 pages.
	CAV	*1480 nm Pumping Laser with Fiber Bragg Grating*, Akira Mugino et al., Technical Report of IEICE, The Institute of Electronics, Information and Communication Engineers, pp. 37-42, 1998.
	CAW	*Pump Interactions in a 100-mn Bandwidth Raman Amplifier*, Howard Kidof et al., IEEE Photonics Technology Letters., vol. 11, No. 5 May 1999.
	CAX	*Properties of Fiber Amplifiers and Their Applicability to Digital Optical Communication Systems*, Yasuhiro Aoki, Journal of Lightwave Technology, vol. 6, No. 7, Jul. 1988.
	CAY	*Amplified Spontaneous Raman Scattering in Fiber Raman Amplifiers*, Kiyofumi Mochizuki et al., Journal of Lightwave Technology, vol. LT-4, No. 9, pp. 1328-1333, Sep. 1986.
	CAZ	*Optical Fiber Transmission Systems Using Stimulated Raman Scattering: Theory*, Kiyofumi Mochizuki, Journal of Lightwave Technology, vol. Lt-3. Jun. 3, 1985, pp. 688-694.
	CBA	*Amplified Spontaneous Raman Scattering and Gain in Fiber Raman Amplifiers*, Mark L. Dakss et. al., Journal of Lightwave Technology, vol. Lt-3, No. 4, Aug. 1985, pp. 806-813.
	CBB	*Polarization Effects in Fiber Raman and Brillouin Lasers*, Rogers H. Stolen, IEEE Journal of Quantum Electronics, vol. QE-15, No. 10, Oct. 1979, pp. 1157-1160.
	CBC	*Spontaneous and Stimulated Raman Scattering in Long Low Loss Fibers*, John Auyeung et. al., IEEE Journal of Quantum Electronics, vol. QE-14, No. 5, May 1978, pp. 347-352.
	CBD	*Degree of polarization in jointed fibers: the Lyot depolarizer*, Kiyofumi Mochizuki, Applied Optics, vol. 23, No. 19, Oct. 1, 1984, pp. 3284-3288
	CBE	*Performance of Lyot Depolarizers with Birefringent Single-Mode Fibers*, Konrad Bohm et. al., Journal of Lightwave Technology, vol. LT-1, No. 1, Mar. 1983, pp. 71-74.
	CBF	*A Monochromatic Depolarizer*, Bruce H. Billings, Journal of the Optical Society of America, vol. 41, No. 12, Dec., 1951, pp. 966-975.
	CBG	Ryuichi Sugizaki et al., *Polarization insensitive broadband transparent DCF module with faraday rotator mirror, Raman-amplified by single polarization diode-laser pumping*, Communication, OFC/IOOC '99, Technical Digest, vol. 1, Feb. 21-26, 1999, pp. 279-281 (with one page abstract).

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	CBH	U.S. Patent No. 6,501,593, Pending U.S. patent application No. 09/886,211 filed Jun. 22, 2001. (previously submitted).
	CBI	U.S. Patent No. 6,654,162, Pending U.S. patent application No. 09/886,212 filed Jun. 22, 2001. (previously submitted).
	CBJ	U.S. Patent No. 6,636, 344, Pending U.S. patent application No. 09/944,601 filed Sep. 4, 2001. (previously submitted).
	CBK	Bennett, J. M. "Physical Optics." The Handbook of Optics, McGraw-Hill, 1995. pp. 5.22-5.25.
	CBL	H. Masuda et al., *Ultra-wideband hybrid amplifier comprising distributed Raman amplifier and erbium-doped fibre amplifier*, Electronics Letters, vol. 34, No. 13, Jun. 25, 1998, pp. 1342-1344.
	CBM	Hiroji Masuda et al., *75-nm 3-dB Gain-band Optical Amplification with Erbium-doped Fluoride Fibre Amplifiers and Distributed Raman Amplifiers in 9 .times. 2.5-Gb/s WDM Transmission Experiment*, ECOC 97, Conference Publication No. 448, Sep. 22-25, 1997, pp. 73-76 plus one page Abstract.
	CBN	*Broadband Raman Amplifier for WDM Transmission*, Yoshihiro Emori, et al, Fifth Optoelectronics and Communications Conference (OECC 2000) Technical Digest 10-14, July 2000, pp. 26-27
	CBO	*Broadband Raman amplifiers design and practice*, Shu Namaki, et al., Optical Society of America Conference, Technical Digest, 9-12 July 2000, p. 7-9
	CBP	*Cost-effective depolarized diode pump unit designed for C-band flat-gain Raman amplifier to control EDFA gain profile*, Yoshihiro Emori, et al., Optical Society of America Conference, March 5-10, 2000, pp, 106-108
	CBQ	K. Aida et al, Design and performance of a long-span IM/DD optical transmission system using remotely pumped optical amplifiers, IEE Proceedings, Vol. 137, Pt. J. No. 4, August 1990, pp. 225-229, plus one page Abstract

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